SBN Near Detector Building Hazard Awareness Training Handout

Version 2.2
29 October 2019

Overview

The installation phase of the Short Baseline Near Detector (SBND) experiment presents many potential hazards. This document is intended to inform you of the potential hazards you may encounter in the SBND building and the proper precautions to take to reduce risks. Please read the entire document, then either take the online test, or sign and submit the signature sheet at the end. As new phases are entered, updated versions of this document will be released and retraining will be required.

1 Introduction

This training document outlines the hazards specific to the SBND building.

All personnel are required to immediately stop any activity that poses an imminent danger to personnel or the environment and notify their supervisor/point-of-contact (POC) and Division Safety Officer (DSO). If you find a situation in which you need advice, training, review or a decision in regards to safety or safe operations, you should first consult with your immediate supervisor/point-of-contact (POC). If you and your supervisor/POC conclude that the matter goes beyond your own group, that you need assistance in resolving it, or that you need to arrange for safety training, you should contact the Neutrino Division (ND) Division Safety Officer (DSO), Angela Aparicio (x3701, asands@fnal.gov). In the event of an emergency, you should call ext. 3131 from any Fermilab telephone.

Environmental Safety, Health & Quality (ESH&Q) materials referenced in this document can be consulted for guidance on ESH&Q issues. These materials can be found on-line at this URL: http://eshq.fnal.gov/atwork/

1.1 Planning Your Work

Prior to initiating new work at the SBND you must contact the SBND Installation Coordinator – Roberto Acciarri (acciarri@fnal.gov). The appropriate ES&H documentation, such as written hazard analyses, and sign-offs will be required prior to starting any new work.

Daily planning and coordination on site at the SBND building will be performed by the SBND Lead Technician, Kelly Hardin (x2933, hardin@fnal.gov).

ES&H oversight will be provided by the the ND DSO, Angela Aparicio (x3701, asands@fnal.gov).

Issues of building maintenance should be directed to the SBND Building Manager, Harry Ferguson (x2450, ferguson@fnal.gov).

The Experiment Liason Officer (ELO) is Steve Hahn (x2123, hahn@fnal.gov).

2 Personal Protective Equipment

All personnel entering the SBN-ND building must wear sturdy, closed-toe shoes, at a minimum, during all phases of installation. Hard hats are required in nearly all areas of the building due to the crane coverage of the building and the risk of items falling through the grating over the cryo platform and mezzanine.

Additional PPE required for specific installation activities will be determined based on the hazards of the specific tasks and must be described in the associated written job hazard analyses.

3 Electrical Hazards

3.1 Impedance Monitoring System

The Impedance Monitoring System monitors the 'isolation' between the building and detector grounds. When a direct connection is made between the two grounds, a visual flashing warning beacon and audible alarm is activated. The audible alarm sound is a steam engine train whistle.

There are many locations within the facility where detector and building grounded conductive materials come within close proximity to each other. These areas are identified with red tape on the detector grounded items.

In the event that the warning beacon and audible alarm are activated, all workers should stop and see if something they have done has caused the short. If assistance is required, notify the SBN Electrical Coordinator (x3100, bagby@fnal.gov). Workers will be asked of their exact location and what they were doing when the alarm was activated.

4 Hazardous Materials at SBND

Any cutting, coring/drilling of concrete requires ES&H review of the work. Contact the ND DSO. Depending on the type and amount of work, controls such as a HEPA vacuum or respiratory protection may be required. See the Fermilab Silica Guidance Table for more information.

5 Emergencies at SBND

Call ext. 3131 from a lab phone (630-840-3131 from a cell phone) in the event of an emergency situation, such as personnel requiring medical treatment for any reason. Stay on the phone until the emergency operator indicates that s/he has all of the necessary information, including your name, location and nature of the emergency. Do not attempt to bandage another person or clean any bodily fluids from another person's injury.

Take note of the exits in the areas where you are working; exits are marked with illuminated signs. When evacuating any area, proceed to the designated assembly point and wait there until the 'all clear' signal is given. If you must leave and can't wait for the 'all clear', tell your supervisor or an Emergency Warden. Rescue attempts will be made by the Fire Department if someone is unaccounted-for and believed to be in an unsafe area (e.g., burning structure, oxygen deficient area). If you notice that a fellow worker is missing during an emergency, immediately report this to an Emergency Warden, the Incident Commander (Fire Dept.) or the Fire Chief.

5.1 Steady Alarm (Fire Alarm)

Exit via the closest exit door; gather at the emergency assembly area, located in the SBND parking lot. Await futher instruction from emergency responders.

5.2 Whooper Alarm (ODH Alarm)

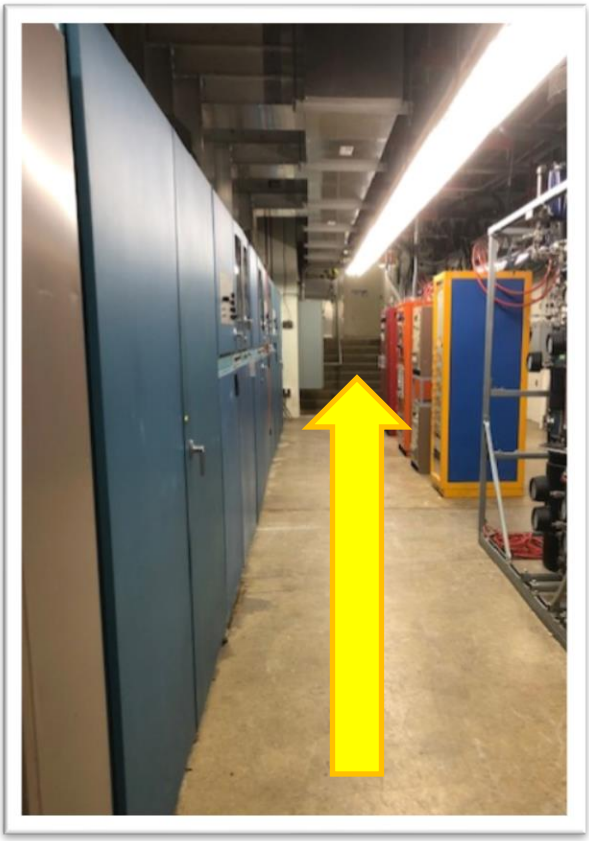
Exit via the closest exit door; gather at the emergency assembly area, located in the SBND parking lot. Await further instruction from emergency responders.

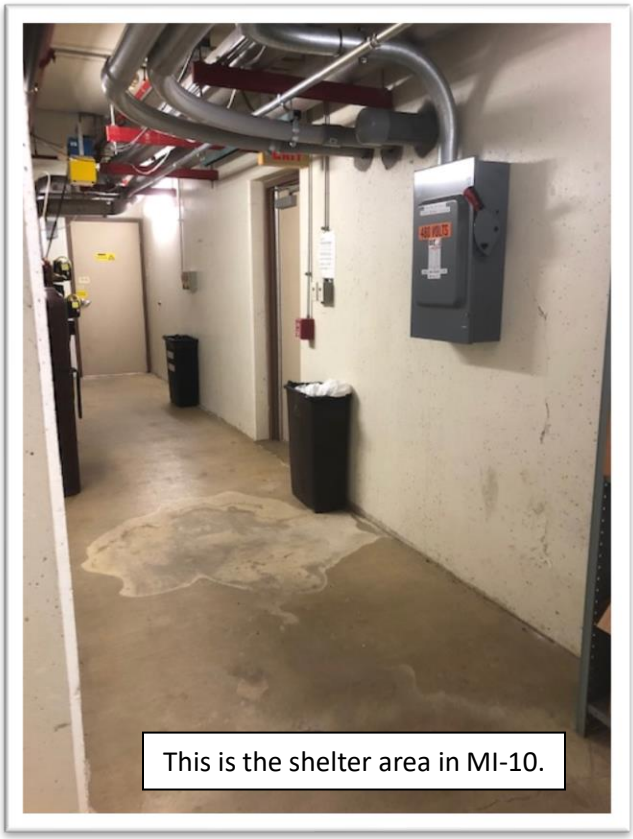
5.3 Sitewide Emergency Warning System (SEWS)

This is a verbal communication system broadcast throughout all areas of the laboratory. It is used to notify personnel when hazardous conditions exist and what protective actions to take. It is very important that you

respond to its warning tones and messages and that you follow the transmitted instructions. If the nature of the message indicates severe weather (e.g. a tornado), promptly go to the designated shelter for your area.

The designated shelter area is located in the **MI-10 building**. Use one of the two emergency key boxes (red, located next to East doors) to obtain the key for the MI-10 building. Walk/run to the MI-10 building. Using the key from the key box, unlock the door and follow the signs to the interior hallway - up the stairs, take a right and then a left into the hallway. Remain in the shelter until given directions via the safety alert monitor that it is safe to exit.





6 Hazards Associated with Operating Machinery

The SBND building was designed with a unique overhead door system. Due to the many inspection checks necessary to safely operate the overhead door, **only personnel who have completed the hands on training for this door may operate it**.

7 Hazards Associated with Working at Heights at SBND

Hard hats are required whenever working in an area where personnel lifts (such as aerial or scissor lifts) are in use. Fall protection is required when working with aerial lifts (boom or articulating).

Any ladder use on the surface, cryo platform or mezzanine levels where the ladder is placed within a ladder-height distance from any guardrail requires the use of fall protection. Contact the ND DSO to review acceptable anchor points.

Only individuals who have completed Fall Protection Orientation [FN000304] Training may use fall protection equipment. Any use of personal fall protection will require a written hazard analysis that includes a fall rescue plan.

Note that access on the Cryo platform is restricted to cryogenic personnel only.

8 Hazards Associated with Sustained High Noise Levels at SBND

Some tools and equipment used during the installation period may generate high noise levels. Signs that the noise level is hazardous include if you are unable to hear a person talking (without shouting) standing 3 feet from you. If you believe the noise levels are excessive, contact the ND DSO or the ES&H Section Industrial Hygiene Group, who can review the work and noise levels to determine if engineering controls or personal protective equipment is required.

9 Miscellaneous

It is always preferred that people not work alone. When this is impractical, workers should at least ensure that another person, such as their supervisor, is aware of when and where they are working, and they should make arrangements to periodically check-in with that person. This is especially important for work during off-hours. Also note that for some types of jobs, explicit "two-man rule" requirements may exist.

Appropriate PPE must be worn to protect against hazards. Consult the written hazard analysis, your supervisor, the SBND Installation Coordinator, or ND DSO if unsure what PPE is necessary.

10 SBN-ND Contacts

Building Manager	Harry Ferguson	x2450, ferguson@fnal.gov
SBND Installation Coordinator	Roberto Acciari	acciarri@fnal.gov
SBND Lead Technician	Kelly Hardin	x2933, hardin@fnal.gov
Experiment Liason Officer (ELO)	Steve Hahn	x6337, mcgivern@fnal.gov
SBN Program Manager	Peter Wilson	x2156, pjw@fnal.gov
SBN Deputy Program Manager	Cat James	x2287, cjames@fnal.gov
SBN Program Engineer	Barry Norris	x3672, norris@fnal.gov
SBN Program Electrical Coordinator	Linda Bagby	x3100, bagby@fnal.gov
Division Safety Officer/SBN ORC Chair	Angela Aparicio	x3701, asands@fnal.gov
Radiation Safety Officer	Nino Chelidze	x2995, chelidze@fnal.gov

11 SBND Building Hazard Awareness Quiz

Name: _____ ID#: _____ Date: _____

1) Any work where you will be grinding, cutting or drilling into concrete requires review by ESH personnel.
   a) True
   b) False

2) What actions should you take if you hear the tornado sirens?
   a) Stay on the main level of the building
   b) Take shelter in the lowest level of the building
   c) Get in your vehicle and drive home
   d) Walk/drive to MI-10 to take shelter in that building

3) What actions should you take if you hear a fire alarm?
   a) Take shelter in the lowest level of the building
   b) Investigate if there is really a fire
   c) Evacuate the building and gather in the SBND parking lot
   d) Get in your vehicle and go home

4) You would like to initiate new work in the SBND building. Who must you contact prior to the start of work?
   a) The Main Control Room
   b) The SBND Installation Coordinator
   c) The Division Head
   d) Facility Engineering and Site Services

5) What should you do in the event any person requires medical treatment?
   a) Let the injured figure it out
   b) Call extension 3131
   c) Call the installation coordinator
   d) Call the Main Control Room
   e) Treat the person with a first aid kit

6) Your work in SBND requires you to use fall protection. What will you need to prepare prior to starting this work?
   a) A written hazard analysis
   b) A written fall rescue plan
   c) A Human Performance Improvement (HPI) report
   d) Both A and B

12 Signature Page and Training Record

"I have read the **SBND Hazard Awareness Training Handout** and understand the hazards present within the facility. Also, I agree to follow all of the listed work rules and emergency procedures."

Print your name: _____Fermilab ID#: _____

Division/Section/Affiliation: _____Department/Group: _____

Fermilab Phone #: _____ Mail Station: _____

Email address: _____

Your signature: _____

Today's Date: _____

If you have not completed this training online, please complete the quiz and this form and return both to:

Angela Aparicio, MS 119

----------FOR ADMINISTRATIVE USE ONLY----------

Course: SBND Hazard Awareness Training (NDSBNND1/CB/01)

Quiz score: _____/6 (score < 5 = fail)

TRAIN group assignment: _____

Authorization: _____
(Must be signed by ESH&Q personnel)